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ABSTRACT

Rural school districts have problems providing specialized training to staff in remote areas, and rural teachers often need specialized knowledge because of the lack of programs for rural students with low incidence handicaps. Emerging videodisc technology may lessen some of these difficulties. Utah State University has developed a videodisc-assisted training program for preservice teachers entitled "Effective Instruction: Techniques for Classroom Interaction." This group instruction program contains four units: (1) a five-step sequence that teaches trainees to monitor student responses, reinforce accurate performance, and correct errors; (2) how to use modeling, simplify complex responses, and use physical prompts and leading questions to help students arrive at correct answers on their own; (3) how to minimize problem behavior and encourage student attention to work; and (4) effective strategies for teaching overly dependent, careless, or mildly disruptive students. All units use the same lesson structure: home study of reading materials followed by in-class videodisc-based discrimination training, roleplay simulations, and supervised practicum. Level 1 (instructor controlled) videodisc programs have particular promise for inservice education in rural and remote areas because they are easy to disseminate, require only a videodisc player and monitor, and can be taught effectively by a wide range of instructors. However, it is important to emphasize that videodiscs elicit primarily verbal responses and must be integrated with applied training methods such as roleplay and supervised practicum. (SV)

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# The Application of Video Disc Technology In Preservice Teacher Training

Sher (1978) noted that 67% of the school districts in the United States are classified as rural, remote, or isolated. Rural school districts face a distinct challenge in securing and retaining sufficient numbers of competent staff (Helge, 1984; Helge, 1983) Compounding the recruitment problem is the fact that it is difficult to provide specialized training to staff in rural and remote areas. First, individuals with specialized expertise tend to be in universities which are not proximate to remote school districts and second, the cost of sending rural personnel to more populous areas for training usually requires financial resources in excess of those available to rural districts. Finally, teaching staff in rural and remote areas need a broad base of knowledge because there are few specialized programs for students with low incidence handicaps.

The emerging videodisc technology has potential to temper these problems to some extent. There is a growing use of video discs in education and special education (Thorkildsen and Friedman, 1984) although, to date, there have been few applications for training in special education teachers (Rule, Salzberg, & Schulze, 1988). Thus, there is little scientific information available at this time bearing on the question of how to most effectively use video discs in teacher training. The question is complex. First, video disc programs vary extensively in instructional design, in their scope of content, and in their quality. Second, the most effective use of a video disc program may be different for novice trainees and for experienced teachers. Third, how videodisc programs are best used might depend upon the type of content under instruction. In particular, a more multifaceted training methodology may be required to teach trainees to perform instructional techniques than to simply give them knowledge about those techniques. For example, it is relatively easy for trainees to learn that they should praise students and that their praise should be frequent, descriptive, varied, sincere, and age-appropriate. However, trainees who consistently describe the attributes of effective praise may still not praise students effectively when they are teaching. How to best use videodiscs in teacher training will probably differ for knowledge acquisition than for performance training. This paper addresses methodology issues in relation to a videodisc-assisted training program for preservice teachers developed at Utah



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State University (Salzberg, Rule, Schulze & Fodor-Davis, 1988) titled Effective Instruction: Techniques for Classroom Interaction (EI:TECI).

The EI-TECI curriculum is a Level 1[1] group instruction videodisc program that is intended for novice, preservice teacher trainees. The curriculum consists of two laser videodiscs, a comprehensive trainer's manual and a trainees' manual. There are four units in the Program (see Figure 1). The first

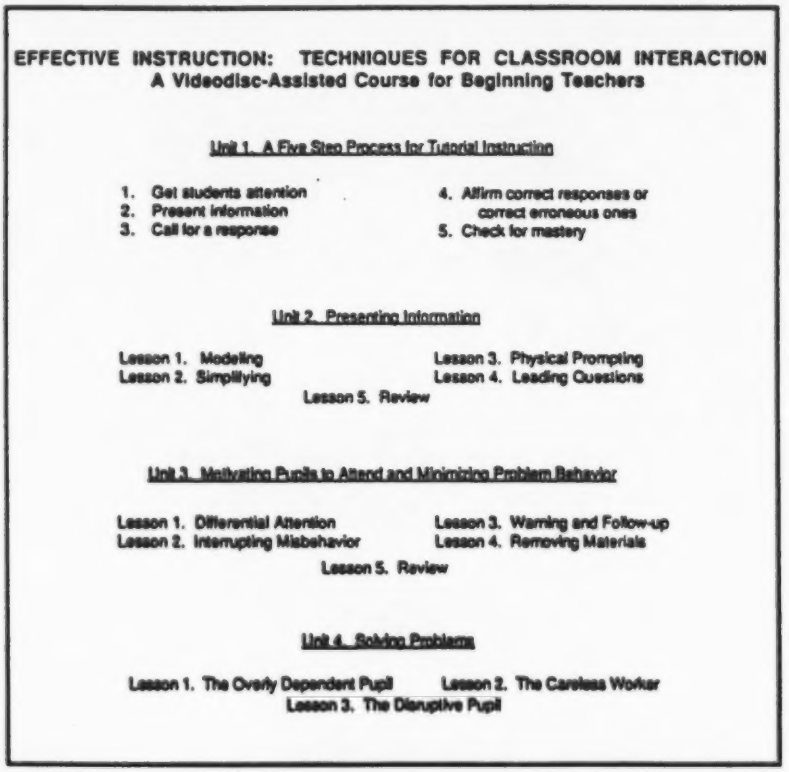
EFFECTIVE INSTRUCTION: TECHNIQUES FOR CLASSROOM INTERACTION
A Videodisc-Assisted Course for Beginning Teachers
Unit 1. A Five Step Process for Tutorial Instruction
1. Get students attention
2. Present information
3. Call for a response
4. Affirm correct responses or correct erroneous ones
5. Check for mastery
Unit 2. Presenting Information
Lesson 1. Modeling
Lesson 2. Simplifying
Lesson 3. Physical Prompting
Lesson 4. Leading Questions
Lesson 5. Review
Unit 3. Motivating Pupils to Attend and Minimizing Problem Behavior
Lesson 1. Differential Attention
Lesson 2. Interrupting Misbehavior
Lesson 3. Warning and Follow-up
Lesson 4. Removing Materials
Lesson 5. Review
Unit 4. Solving Problems
Lesson 1. The Overly Dependent Pupil
Lesson 2. The Careless Worker
Lesson 3. The Disruptive Pupil

Figure 1. The content of the EI-TECI Program

unit presents a 5-step teaching sequence that assures that trainees will learn to carefully monitor student responses, reinforce accurate performance and correct errors. In Unit 2, trainees learn to use modeling, simplify complex responses, physically prompt and to use leading questions to help pupils arrive at correct answers as independently as possible. In Unit 3, trainees learn how to encourage pupils to attend to their work and how to minimize problem behavior.

[1]Level 1 videodisc programs are generally intended for group instruction and are controlled by the instructor using a hand held remote control rather than by a microcomputer. For more information about the basic types of videodisc systems, see Salzberg, Rule, Chen, Fodor-Davis, Morgan and Schulze (1988). Copies of that article may be obtained from the author.

Finally, Unit 4 provides effective strategies for teaching pupils who are overly dependent, careless in their work, or mildly disruptive.

Instructional Design

Formative evaluations during the development of the EI-TECI curriculum suggested that in order for preservice trainees to learn targeted instructional techniques, a 5-stage teaching process is required in which they learn: (1) that how teachers interact with pupils is important; (2) to identify relevant dimensions of teacher-pupil interaction; (3) to make discriminations about critical attributes of teacher interactions from video scenarios and from live observations; (4) to perform instructional techniques rather than just talk about them; and finally, (5) to apply the instructional techniques in public school classrooms. This 5-stage teaching process led to the development of a lesson structure that is used throughout all four units in the EI-TECI program. The structure is illustrated in Figure 2.

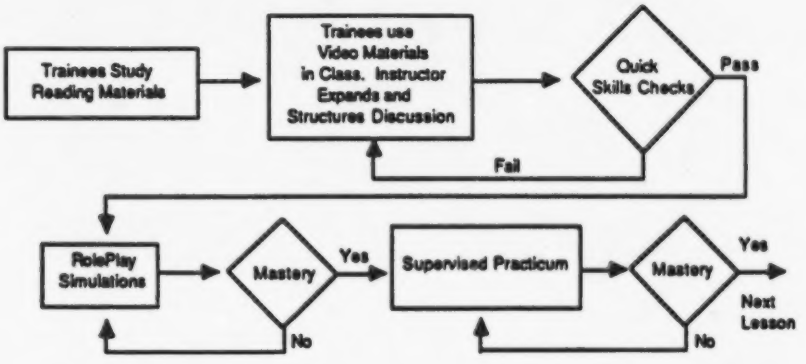


Figure 2. The lesson structure used for all units of the EI-TECI program.

Readings. At the beginning of each lesson, trainees study reading material at home. Most of this material is in the trainee's manual which is included in videodisc-assisted curriculum. Readings provide knowledge that helps trainees understand the context in which the instructional techniques are used and how to use them appropriately. Sometimes instructors assign additional readings to expand trainees' knowledge or to provide a particular theoretical orientation.

Videodisc Based Discrimination Training. After completing the readings, trainees use the videodisc material in class. First, techniques are demonstrated on the videodisc with narration that explains the technique and highlights its relevant features. After the demonstration, the instructors may answer questions, expand the explanation on the videodisc, or encourage discussion. Next, a series of video scenes are presented in which the technique is sometimes correctly applied and sometimes not correctly applied. After watching each scene, trainees respond to questions contained in their manual. The trainers' manual has the same questions accompanied with answers. There are several types of questions. One type focuses on procedural aspects of the technique. These questions teach trainees to label techniques and to identify their components.

Another type of question addresses whether the technique is performed correctly. These questions teach trainees how to distinguish whether the technique is being applied appropriately. A third type of question relates techniques to principles of learning and effective instruction practices. These questions help trainees develop a conceptual base to help them to generalize their skills. In addition to answering questions, trainees learn to make discriminations about teaching techniques by taking data as they watch designated video scenes. Observation forms in the trainer's and trainees' manuals accompany scenes designated for data taking. In the trainer's manual, the forms are already filled in; in the trainee's manual, the recording forms are blank. For data taking scenes, trainees watch the video scenario several times. Sometimes they watch them to answer questions and sometimes they watch them to record data. The advantage of videodisc is evident in data collection exercises, since scenes can be reshown as many times as necessary for trainees to learn to observe accurately. Further, scenes can be shown in slow motion, even frame by frame, so that trainees may see the teacher-pupil interactions more clearly.

Roleplay Simulations. When discrimination training with the videodisc is completed, trainees should be able to label a technique, discuss its relevant attributes, describe when and how to use it appropriately, take data on its appropriate use, and explain how the technique fits into a conceptual framework. However, at this stage, trainees can not necessarily perform the technique. Roleplay simulations that accompany each unit provide trainees the opportunity to practice performing the targeted teaching skills. In roleplay simulations, one or more trainees play "pupils," one plays "teacher," and one serves as a colleague coach. The "pupils" are cued with cards to behave in ways that call for the application of the targeted teaching techniques. The colleague coach observes the simulation and gives feedback to the "teacher." Printed forms guide observations during the simulation and structure the feedback process.

The videodisc program includes scenes that are used to introduce the roleplay simulation and teach trainees how to give accurate, constructive, feedback so that they can more aptly be a colleague coach. At the completion of the roleplay simulations, trainees should have learned to actually perform the targeted instructional techniques and to give feedback to one another.

Supervised Practicum. Unfortunately, performance in a roleplay simulation does not guarantee that trainees will apply the techniques appropriately when they are teaching pupils with handicaps in public school classrooms. Consequently, after roleplay simulations, trainees are required to apply the instructional techniques as they teach pupils in their practicum. On site supervision helps trainees adapt instructional techniques to their particular teaching situations and affirms that they have, in fact, mastered the techniques. There are three levels of supervision. First, trainees serve as colleague coaches for one another at the practicum site. Second, a university supervisor visits trainees in their classroom to provide consultation and to verify their skills. Finally, cooperating teachers also observe trainees and provide feedback.

## Discussion and Concluding Remarks

Videodisc technology is a versatile medium that combines the advantages of motion video, narration, graphics, and interactivity. In the EI-TECI program, videodisc material is used to impart knowledge and to help trainees learn to differentiate among teaching techniques and understand the attributes that determine their appropriate use. Videodisc material also helps trainees learn to take data on teaching performance and provide constructive feedback to one another to support roleplay simulations and practicum supervision. Videodiscs are a flexible medium. Instructors may repeat scenes to help trainees see the more subtle aspects of teaching interactions. Instructors may also expand information presented on the videodisc with additional readings, lectures, or demonstrations. In fact, instructors may create entirely new programs with the video material on the disc by selecting and re-sequencing scenes and fitting scenes with didactic information that emphasizes different concepts.

Level 1 videodisc programs have particular promise for training personnel in rural and remote areas because they are easy to disseminate. Level 1 videodiscs require only two pieces of standard, commercially available equipment: a videodisc player and a monitor. The equipment is relatively inexpensive, simple to operate, easy to maintain, and reliable in use. Most important, Level 1 videodisc programs can be taught effectively by a wide range of instructors if they are accompanied by a comprehensive trainers' manual, as the EI-TECI program is. Videodisc based programs can be used in inservice training to give teams of staff who serve children with handicaps a common knowledge base. Combined with in-class supervision, this knowledge base can be translated into consistent in-class instructional practice across team members. Such training may be particularly important in rural areas as both professional and paraprofessional staff may need to rely on inservice training to assist them in serving children with divergent needs.

Videodisc technology is a powerful tool for training instructional personnel and will gradually become more popular as a greater number of programs become available. However, videodiscs are not a panacea! Used in isolation, videodiscs have distinct limitations. The most important limitation is that trainees' responses to videodiscs are primarily verbal. That is, trainees verbalize answers to questions, describe the interactions that they observe in the video scenes, record data, and discuss concepts related to the techniques that they are learning. Verbal knowledge about instructional techniques sets the stage for learning to perform those techniques; however, it does not, in itself, assure competent performance. For that reason, it is important to emphasize in closing this paper that videodisc programs should be integrated with other training methods such as roleplay and supervised practicum to assure that trainees learn to perform rather than simply talk about instructional techniques, and especially, that they learn to apply them while they teach pupils in public school classrooms.

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